

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A probe driving mechanism for displacement measuring apparatuses for use in measuring the sizes of a workpiece without causing the workpiece to be deformed even when a probe is brought into contact therewith, comprising:

a motor for driving the probe;

a scale for detecting the displacement of the probe;

a workpiece sensor for detecting the engagement of the probe with the workpiece; and

a device for:

controlling a power being applied to the motor based on an output from the scale when the output from the scale varies based on the power applied to the motor;

making a judgment that the probe contacts the workpiece when ~~the variation of the output from the scale becomes less than an equal~~ a level of power being applied to the motor, and then reducing the power being applied to the motor; and

subsequently controlling the power being applied to the motor based on a greater one of speed variation of the output from the scale and an output from the workpiece sensor when the output from the workpiece sensor varies.

2. (Previously Presented) The probe driving mechanism for displacement measuring apparatuses according to Claim 1, wherein the probe is supported on a parallel link mechanism so that the probe can be moved freely in the vertical direction, and the output from the workpiece sensor varies when the probe contacts the workpiece to cause a link member constituting the parallel link mechanism to attain a predetermined angle owing to the engagement of the probe with the workpiece.

3. (Previously Presented) The probe driving mechanism for displacement measuring apparatuses according to Claim 2, wherein, when the output from the workpiece sensor varies and attains a predetermined level, the output from the scale is held and determined as a measurement value of the workpiece.

4. (Currently Amended) The probe driving mechanism for displacement measuring apparatuses according to Claim 3, wherein, when the output from the scale is held and determined as a measurement value of the workpiece with a ~~judgement~~ judgment that the measurement operation is completed given, the probe is retracted upward by a predetermined quantity, and a measurement operation in which the deformation of the workpiece is prevented is conducted.

5. (Previously Presented) The probe driving mechanism for displacement measuring apparatuses according to Claim 3, wherein a position memory for storing vertical positions of the probe therein is further provided, the measurement of the workpiece being conducted by controlling the movement of the probe so that the probe is moved at a high speed up to the height stored in the position memory and then at a low speed from the mentioned height so as to bring the probe into contact with a surface of the workpiece.

6. (Previously Presented) The probe driving mechanism for displacement measuring apparatuses according to Claim 1, wherein the workpiece sensor is made of a photocoupler, and detects in a non-contact state the attainment of a predetermined angle by a link member constituting a parallel link mechanism to cause an output from the photocoupler to vary.

7. (Previously Presented) The probe driving mechanism for displacement measuring apparatuses according to Claim 1, wherein the scale is a non-contact type photoelectric encoder.